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ABSTRACT

Reanalysis of a standard set of data for 16 nations has brought new insights into the leading issues of comparative social mobility. The reanalysis provides considerable support for the Featherman-Jones-Hauser hypothesis, which claims that there is convergence in mobility processes once conditions of occupational supply and demand are controlled. The hypothesis is modified, however, in two respects: First, it is qualified by the suggestion that uniformity in mobility regimes is not limited to highly industrialized societies but may apply equally to less developed societies; and second, it is elaborated through specification of the structure of the shared mobility regime. Properties of mobility shared by the 16 countries considered are: (1) symmetry of exchange between occupational strata; (2) equality of mobility chances off the main diagonal; (3) severe immobility at the two extremes of the occupational hierachy; and (4) considerable mobility in the middle of the hierachy. These findings of basic similarity do not preclude findings of deviation from the common mobility regime, which seem to be at least as much a consequence of political organization as of economic development. The effects of political and economic variables on mobility processes are more complex than commonly supposed because they differ across occupational strata. (Author/CMG)

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Comparative Social Mobility Revisited: Models of Convergence and Divergence in 16 Countries

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ABSTRACT

New insights into the leading issues of comparative social mobility are gained from a reanalysis of mobility tables for 16 nations. We find considerable support for the Featherman-Jones-Hauser hypothesis, which claims there is convergence in mobility processes once conditions of occupational supply and demand are controlled. We qualify the hypothesis with evidence that convergence does not emerge from the standardizing logic of industrialism, and we elaborate the hypothesis by specifying the structure of the common mobility regime. Properties of mobility shared by the 16 countries include (a) symmetry of exchange between occupational strata, (b) equality of mobility chances off the main diagonal, (c) severe immobility at the two extremes of the occupational hierarchy, and (d) considerable mobility in the middle of the hierarchy. These findings do not preclude systematic effects of political and economic variables on mobility processes. However, those effects are more complex than commonly supposed because they differ across occupational strata.

1.0 INTRODUCTION

The consequences of economic development and political programs for rates and patterns of social mobility continue to be matters of contention, despite a long tradition of research addressing these issues.[1] Indeed, the current diversity in the field of comparative social mobility may rival the variation in opinion during the 1960s about mobility trends in the United States (Duncan 1968). That disparate conclusions have been reached even from the same set of data may be a problem for the sociology of knowledge (Koffel 1974). Alternatively, we suggest that some of the diversity derives from the application of inadequate statistical methods, and from repeated failures to distinguish mobility processes among occupational strata. We elaborate these ideas after briefly reviewing the current state of comparative mobility research.

Three issues have dominated this field, yet remain largely unresolved. The first issue, and the starting point for most research, is the thesis advanced by Lipset and Zetterberg (1959) that observed mobility rates are much the same in Western industrialized societies. Informed by a theory of developmental convergence, it is argued that the logic of industrialization demands a certain uniformity in institutional structures and mobility patterns. However, the more recent and detailed data lend little support for this position (Hauser and Featherman 1977; Erikson, Goldthorpe, and Portocarero 1979).

In a comparative analysis of occupational mobility in Australia and the United States, it was suggested by Featherman, Jones, and Hauser (1975) that the Lipset-Zetterberg thesis might be salvaged if

reformulated to pertain to underlying fluidities rather than observed mobility rates. This hypothesis, labelled the FJH revision by Erikson, Goldthorpe, and Portocarero, argues that the mobility process becomes invariant only after conditions of occupational supply and demand are controlled. Although the FJH revision has been confirmed in pairwise or three-way comparisons (Erikson, Goldthorpe, and Portocarero 1982; McRoberts and Selbee 1981), research with a larger sample of countries tends to emphasize variability instead (Tyree, Semyonov, and Hodge 1979; Hazelrigg and Garnier 1976; McClendon 1980a).[2] There is also some disagreement about the degree to which "structural influences," reflected in the margins of the mobility table, can account for national differences in observed mobility rates. The FJH revision implies that variation in observed mobility must be attributed to marginal differences, yet McClendon (1980b) has recently reported results that suggest otherwise. This issue will be discussed in more detail during the presentation of results. At this point, suffice it to say there is considerable evidence that the Lipset-Zetterberg thesis in its original version can no longer be sustained, while the status of the FJH revision remains unclear.

A second and closely related issue is the effect of economic development on patterns of social mobility. The contention is that mobility increases with industrialization, even after controls are introduced for changes in class or occupation distributions. Proponents of the "industrialism thesis" argue that economic development entails a process of rationalization that weakens ascriptive allocation of roles.

It is also suggested that the expansion of mass communication attenuates cultural barriers to mobility and that increases in geographic movement reduce parental control over the occupations of their offspring (Treiman 1970). The industrialism thesis is to be contrasted with the FJH revision; the latter allows an initial developmental effect on mobility, but it implies there is no further effect once a certain level of industrialization is reached. Unfortunately, the evidence on the industrialism thesis is no more conclusive than that addressing the FJH revision. While one body of literature reports a positive relationship between industrialization and exchange mobility (Tyree, Semyonov, and Hodge 1979; Hazelrigg 1974; Cutright 1968), another reports no significant association (Hazelrigg and Garnier 1976; Hardy and Hazelrigg 1978). In an effort to reconcile these findings, McClendon (1980a) claims that the positive relationship holds only when the sample is restricted to men of nonfarm origins. Although McClendon's research leads in a fruitful direction, we will show that his conclusions are incorrect.

A third issue in comparative mobility is the impact of noneconomic variables on mobility processes. Contrary to the view that the logic of industrialism results in a uniform institutional structure, it has been suggested that the shape of the mobility regime is open to manipulation by political agencies or social policies. The claim is that noneconomic variables not only influence mobility rates indirectly by affecting the structure of occupational demand, but that they also have implications for fluidities freed from marginal effects. This argument

has been advanced persuasively with regard to the consequences of social democratic policies for reducing class-based inequalities in life chances (Parkin 1971; Stephens 1980; Erikson, Goldthorpe, and Portocarero 1982). Although it is conceded that social democrats have done little to redistribute material rewards, they may have rendered such inequality more palatable by ensuring meritocratic forms of class recruitment.

Others argue that state socialist societies offer yet stronger testimony to the role of political ideology in effecting changes in the stratification system. Aside from increasing the material rewards and prestige of skilled manual workers, socialist policies may also have consequences for the reproduction of classes over generations. In particular, a more fluid class system is suggested by blue-collar educational quotas, the déclassement of upper administrators, the absence of inheritable private property, and the attenuation of a working class subculture (Giddens 1973; Parkin 1971; Simkus 1980). At the same time, there is reason to suppose that the current mobility regimes of socialist states may not differ altogether from those of capitalist states, since many of the egalitarian policies have been reversed in the "secondary stage" of socialist development.

We should mention two further variables that might be classified as noneconomic determinants of mobility regimes. First, it has long been argued that the expansion of educational opportunities should produce a more fluid society. Not only are opportunities to learn skills equalized when the locus of training shifts from the home to the school

(Featherman and Hauser 1978), but cultural barriers to mobility also diminish as mass education resocializes students to a shared system of values. Second, it has been suggested recently that rates of mobility are affected by the distance between social classes (Tyree, Semyonov, and Hodge 1979). Large socioeconomic gaps between classes imply less fluidity because the elite have increased power and motivation to prevent upward or downward movement.

The goals of this paper are to address both the convergence and industrialism theses and to explore the role of noneconomic variables in mobility processes. The preceding review shows these issues are not new, nor are the data we shall employ. These data are provided in Appendix 1 as 3 X 3 classifications of son's by father's occupation for sixteen countries; each table categorizes occupations as white-collar, blue-collar, or farm. The tables were originally assembled by Hazelrigg and Garnier (1976) from "first generation" mobility studies in the 1960s, but they have been reanalyzed extensively (Hardy and Hazelrigg 1978; McClendon 1980a, 1980b; Tyree, Semyonov, and Hodge 1979; Heath 1981).[3] We will not discuss problems of validity and comparability associated with these data since they have been outlined in detail by Hazelrigg and Garnier (1976:500).

It would be fair to argue that the Hazelrigg-Garnier data have been rendered obsolete by the national mobility studies of the early 1970s (Featherman, Hauser, and Sewell 1974; Broom and McDonnell 1977). Data from those studies have been preserved in unit-record form, and comparative studies based upon them may thus specify mobility processes

within nations in far more detail. Moreover, for those nations where detailed data are available from repeated surveys, it will be possible to incorporate a true temporal dimension into comparative analyses. At the same time, we think it useful to analyze the Hazelrigg-Garnier data once more, if only to provide methodolgically sound baseline findings and a template for future comparative research. In our analysis, we gain new insights (a) by applying improved statistical methods, (b) by specifying cross-nationally invariant features of mobility, (c) by specifying multivariate models of the effects of economic, social, and political variables on mobility, and (d) by distinguishing among the inheritance processes of occupational strata. We discuss each of these points in turn.

Perhaps the most serious deficiency of prior research with these data is the use of methods that confound marginal and interaction effects. Research to date has either rescaled marginals arbitrarily or has fitted saturated loglinear models for each country. The former procedure yields altogether uncertain results. The latter estimates interactions that are too large in rows or columns with consistently weak associations, and vice versa (Featherman and Hauser 1978:161-6); in this manner it mutes disparities between occupational strata in the strength of inheritance. This is an important point, for we shall argue that these disparities constitute one feature of a substantial invariance in mobility processes. The analysis presented in the following section fits multiplicative and log-multiplicative models that estimate social fluidity, net of marginal effects. In the later

sections of this paper, we also fit a series of models that directly incorporate economic and noneconomic determinants of social fluidity. That is, these models provide an integrated framework for measuring and interpreting patterns of social mobility, differences in those patterns among nations, and sources of those differences. In addition, the models avoid problems of heteroscedasticity associated with methods that separate the estimation of mobility measures from their regression on explanatory variables (e.g., Tyree, Semyonov, and Hodge 1979).

These models yield new insights into debates on semipermeable class barriers (Blau and Duncan 1967), blue-collar status disinheritance (Goodman 1969a), and vertical class mobility (Hope 1982). Cross-national results are of particular interest since the evidence that currently informs these debates is limited to the United States and a few European countries. Evidence of this nature will also help specify the structure of the mobility regime that is putatively shared by Western industrial societies. Convergence theories have remained notably agnostic on this issue; the FJH revision states there is a single pattern of mobility but leaves the shape of this pattern unspecified. We hope to add substance to the FJH thesis by offering preliminary hypotheses about invariant features of the mobility regime.

Although we argue that there is a broad similarity in mobility processes, this is not to preclude national variations of sociological interest. Moreover, we believe these variations are best explored using multivariate models that represent the effects of several relevant political and economic variables. Indeed, the primary points of

contention demand multivariate analysis. For example, Ossowski (1957) argues forcefully that the question to ask is not whether the introduction of socialism increased mobility, but whether this increase was any greater than might have been expected from the concurrent economic expansion. Similarly, the general debate over convergence also pertains to the consequences of political programs net of developmental processes. In addition to resolving claims for an independent "ideological effect," a multivariate analysis can elucidate the processes by which industrialization influences mobility chances. In this respect it is of particular interest if developmental effects are mediated entirely by the expansion of education and the growth of class equality.

Finally, we investigate differences between occupational strata in opportunities for mobility or inheritance. We believe that these differences in social fluidity arise primarily from variation in the resources and desirability accorded occupations. However, we emphasize variation in economic resources since their transmission is perhaps the most decisive and reliable mechanism of intergenerational inheritance (Goldthorpe 1980:100). It follows that white-collar immobility should be especially strong, since fathers within this stratum can transmit resources in the form of a business enterprise, professional practice, or privileged education. The desirability of white-collar positions strengthens inheritance further, as white-collar sons wish to retain positions comparable to their fathers' positions. In contrast, sons from the blue-collar stratum do not receive economic resources which

bind them to their fathers' stratum, nor do they typically find inheritance as desirable as mobility to the white-collar stratum; the absence of these processes implies considerable mobility for sons of blue-collar origins. The structure of farm inheritance contrasts quite sharply with this blue-collar fluidity. Not only are economic resources in the form of land transferred intergenerationally, but cultural resources directly relevant to the practice of farming are also passed from father to son. Farm inheritance is further strengthened by a cultural "attachment to the land" and spatial isolation from urban markets (Featherman and Hauser 1978:188).

Three implications follow from these observations about inheritance. First, the relative strengths of stratum-specific inheritance may be uniform across nations, simply because there is substantial uniformity in the economic resources and desirability of occupations (Treiman 1977).[4] It is commonly argued that the latter uniformities also account for the cross-national regularity in occupational prestige hierarchies (Treiman 1977; Goldthorpe and Hope 1974). Thus, invariance in mobility processes may be closely related to other constancies in systems of stratification.

Second, the common structure of mobility may apply to all societies regardless of their economic development, rather than deriving from the standardizing logic of industrialism. The FJH hypothesis may be broadened in this manner because occupational resources and desirability are similar in all complex societies, industrialized or not (Treiman 1977). Even more than in the case of our other hypotheses, the evidence

about this invariance should be regarded as most tentative; conclusive results would require a larger sample of nonindustrialized societies.

Third, recent discussions of economic and political effects on mobility may be misleading because they assume uniform effects on the inheritance of all occupational strata. We argue that the consequences of a given variable cannot be generalized across strata because they have differing resources and motivations to favor or oppose the equalization of opportunity. To anticipate some results, we find the white-collar stratum is able to resist forces that might lead to reduced inheritance, while the blue-collar stratum is relatively responsive to economic and political variables. The following analysis measures and attempts to explain this and other patterns of nonuniformity.

2.0 METHODS AND RESULTS

In our analysis, we first specify, estimate, and compare alternative structural models of the 3 X 3 mobility tables; this permits us to measure convergence in gross mobility rates and in social fluidity among nations. Second, using our preferred models, we measure the degree to which inter-societal variation in occupation distributions accounts for variation in mobility rates. Third, we introduce a set of social and political variables in order to explain cross-national variation in the parameters of social fluidity; in particular, we ask whether there are inter-stratum differences in the effects of these variables on immobility.

2.1 Convergence in Mobility Rates and Social Fluidity

It is most striking that there has been no direct test of the

Lipset-Zetterberg hypothesis in earlier studies. To carry out this test, we set up a model of global equality between the mobility classifications in the full set of 16 nations and in the 9 most industrialized, non-socialist nations. The model is

$$E[X_{ijk}] = \alpha_k \beta_i \gamma_j \delta_{ij} \qquad (1)$$

where X_{ijk} is the observed frequency in the ijk^{th} cell of the classification of father's stratum (i) by son's stratum (j) by country (k), α_k pertains to the number of observations in the k^{th} country, β_i pertains to the relative frequency of the i^{th} father's stratum, γ_j pertains to the relative frequency of the j^{th} son's stratum, and δ_i pertains to the interaction between strata i and j. This model says that the proportion of observations in each cell of the mobility table is the same in each country. It specifies that the distribution of stratum origins is the same in each country, that the distribution of stratum destinations is the same in each country, and that the interaction among strata (social fluidity) is the same in each country. The Lipset-Zetterberg hypothesis implies the model of global equality among industrialized countries; we also extend the hypothesis of equal mobility rates to the larger set of countries.

The cross-national mobility data are quite inconsistent with the hypothesis of global equality. Within the more industfialized subsample, this model yields a highly significant likelihood-ratio chi-square test statistic, $L^2 = 3,201$ with 64 degrees of freedom (df). One useful indicator of the departure of the data from this model is the

ratio of the test statistic to its degrees of freedom, $L^2/df = 50.0$. In the full sample, $L^2 = 18{,}390$ with 120 df and $L^2/df = 153.3$. It should not be concluded from the disparity between these two ratios that there is less evidence of heterogeneity among mobility classifications within the industrialized subsample than within the full set of 16 countries. In fact, there are 3 times as many observations in the full sample as in the industrialized subsample, and this entirely explains the difference in ratios of the test statistics to their degrees of freedom.[5] Thus, mobility rates are equally heterogeneous in the industrialized countries and in the full set of countries. We reject the Lipset-Zetterberg hypothesis; it is not even possible to conclude that mobility is relatively homogeneous within the industrialized nations.

The remainder of our analysis focuses on the FJH revision of the Lipset-Zetterberg hypothesis, that is, on the measurement and explanation of inter-societal variation in social fluidity. Table 1 shows the fit of selected models of mobility and immobility in the 16-nation data. The left-hand side of the table pertains to the full set of countries, while the right-hand side of the table pertains to nine highly industrialized nations. In Panel A, the models do not place any cross-country equality constraints on parameters, so the fit statistic for each model is simply the sum of the fit statistics for that model applied to each country separately.[6] Panel B reports the fit of several of the models of Panel A, each subject to the additional restriction that all of the interaction parameters of that model (but

not the marginal effects) are the same in each country. Panel C displays contrasts between corresponding models in Panel A and in Panel B.

Table 1 About Here

For each country, Models 1 through 4 in Table 1 are of the form

$$E[X_{ijk}] = \alpha_k \beta_{ik} \gamma_{jk} \delta_{ijk} \qquad (2)$$

where $\delta_{ijk} = \delta_{mk}$ for $(i,j) \in H_m$. In this context, X_{ijk} is the observed frequency in the ijk^{th} cell of the classification of father's stratum (i) by son's stratum (j) by country (k), and H_m is a partition of the pairs (i,j), which is mutually exclusive, exhaustive, and cross-nationally invariant. Subject to the usual normalizations, this model implies that expected frequencies in the k^{th} country are the product of a grand mean (α_k), a row effect (β_{ik}), a column effect (γ_{jk}), and an interaction effect (δ_{ijk}). Models 1 through 4 differ only by partitioning the pairs (i,j) according to various theories of the structure of interaction. These partitions are displayed in Figure 1; cells sharing a numeric value within a matrix are assigned the same interaction parameter in the corresponding model. Note that we have specialized the model to impose the same partition of cells in each country, but not necessarily to specify the same interaction parameters in each country. Since this general model has been discussed in detail elsewhere (e.g., Hauser 1978,1980), we will not elaborate it further.

Figure 1 About Here

Model 1 specifies conditional independence of father's and son's

stratum, so $\delta_{ijk} = 1$ for all pairs (i,j) in all countries (k); this says there is no intergenerational association in any of the 16 countries. Although the global chi-square statistic, $L^2 = 42,970$, reveals that independence is patently inconsistent with these data, this model provides a baseline statistic representing the association to be explained by subsequent models. Model 2, quasi-perfect mobility, fits a distinct inheritance parameter to each diagonal cell and posits independence among the remaining cells off the diagonal. This model fits extremely well, accounting for 99.7 percent of the association under the baseline model of independence. Indeed, the model cannot be rejected at the .05 level in ten of the sixteen countries, and in all countries it explains at least 97.3 percent of the association. Since this is our preferred model, we shall consider its implications in some detail.[7]

First, quasi-perfect mobility implies quasi-symmetry in a 3 X 3 table. In a mobility classification, quasi-symmetry means that upward and downward moves are equally likely, net of differences in the prevalence of occupations. Thus, our results do not support the interpretation of semipermeable class boundaries advanced by Blau and Duncan (1967) for the United States. Hauser and Featherman (1978:184-187) and Hauser (1981) report a similar finding in disaggregated American mobility tables; we extend their finding to a larger set of countries.[8]

Symmetry in exchange mobility is entirely consistent with intergenerational occupational change and consequent differences between

observed inflow and outflow distributions. We can see this by contrasting the model of quasi-perfect mobility (quasi-symmetry) with that of complete symmetry (Model 8), which posits equal frequencies in corresponding cells above and below the main diagonal of each mobility classification, $E[X_{ijk}] = E[X_{jik}]$. The fit of Model 8, $L^2 = 24,636$, shows that observed frequencies are highly asymmetric. However, from the excellent fit of quasi-perfect mobility (quasi-symmetry), we know this observed asymmetry derives from heterogeneity between origin and destination distributions rather than an intrinsic asymmetry of exchange between occupational strata.

Second, the quasi-perfect mobility model suggests that mobility does not follow a social distance gradient. Those who move off the diagonal are equally likely to reach either of the two remaining strata regardless of distance or direction. The implication is that long-range mobility is no less frequent than short-range mobility after controlling for marginal effects. Hauser and Featherman (1978:Ch. 4) offer a similar interpretation of disaggregated American mobility tables.[9]

Third, the parameters of the quasi-perfect mobility model reveal wide differences in the strength of stratum inheritance.[10] For summary purposes, it is instructive to consider Model 9, which constrains parameter estimates to be the same in all sixteen countries. Net of row and column effects, farm inheritance is 12.3 times more likely than mobility off the diagonal, white-collar inheritance is 5.2 times more likely than mobility, and blue-collar inheritance is only 1.2 times more

likely than mobility. The picture that emerges is one of severe immobility at the two extremes of the occupational hierarchy and considerable fluidity in the middle (compare Hauser and Featherman 1978:Ch. 4). Indeed, the United States and Hungary show significant blue-collar disinheritance.[11] A net propensity for mobility out of the blue-collar stratum was first noted by Goodman (1965:575,1969a) in the classic British and Danish mobility tables of the early postwar period; the results presented here extend his finding to additional countries.[12]

The remaining models in Panel A of Table 1 help us to test, elaborate, and qualify these interpretations. The uniform inheritance model (Line 3) posits a single inflation factor for the main diagonal; the model says that occupational strata share a uniform propensity for inheritance. This model fits poorly, confirming our observation of substantial variability among inheritance parameters.[13]

The model of perfect blue-collar mobility (Line 4) equates densities of mobility and immobility for men of blue-collar origin or destination. Net of marginal effects, this model says that blue-collar workers are recruited equally from all three occupational strata and that men of blue-collar origins are selected equally into all three strata. Further, the model says that blue-collar mobility and immobility are as likely as exchange between the white-collar and farm strata. This model does not fit satisfactorily ($L^2 = 841$ with 32 df), yet it does account for 98 percent of the test-statistic under conditional independence (compare Lines 1 and 4). Moreover, Model 4 does fit well in 6 countries: Italy, West Malaysia, Yugoslavia, Denmark,

Norway, and Sweden (see Appendix 2).[14] The contrast between Model 2 and 4 tests whether there is significant blue-collar stratum inheritance or disinheritance. Although the global contrast between these models is clearly significant ($L^2 = 691$ with 16 df), the contrast is nonsignificant in Australia and in the other 6 countries where Model 4 fits the data. This provides further evidence for attenuated blue-collar inheritance; it is so weak that densities of mobility and blue-collar immobility can be equated in several of the countries in our data.[15]

Models 5 through 7 of Panel A cannot be specified in the form of equation 2 because they treat occupational strata as ordered categories. The equation for Model 5 is

$$E[X_{ijk}] = \alpha_{ik}\beta_{jk}\gamma_{ik}^{j}\delta_{jk}^{i} \qquad (3)$$

where X_{ijk} is defined as before, and $\gamma_{ik} = \delta_{jk}$ for $i = j$. For each country equation 3 says that the expected frequency is the product of a row effect (α_{ik}), a column effect (β_{jk}), a row score (γ_{ik}), and a column score (δ_{jk}). Because row and column scores are homogeneous, equation 3 describes Goodman's (1979a) Model I^*. The equation for Model 6 is

$$E[X_{ijk}] = \alpha_{ik}\beta_{jk}e^{\mu_{ik}\nu_{jk}} \qquad (4)$$

where $\mu_{ik} = \nu_{jk}$ for $i = j$. For each country this model specifies a row effect (α_{ik}), a column effect (β_{jk}), a row score (μ_{ik}), and a column score (ν_{jk}). Because row and column scores are again homogeneous, equation 4 describes Goodman's (1979a) Model II^* (also, see Goodman

1981; Clogg 1982). Although Model 5 is multiplicative and Model 6 is log-multiplicative, both imply that the density of observations depends on the distance between occupational strata. These distances are estimated from the data, but they are equated for origin and destination strata. Substantively, Models 5 and 6 differ in that the former is based upon an a priori ordering of the row and column categories, while the latter is invariant with respect to such an ordering.

The equation for Model 7 is

$$E[X_{ijk}] = \alpha_{ik}\beta_{jk}\delta_k^{ij} \qquad (5)$$

For each country this model specifies a row effect (α_{ik}), a column effect (β_{jk}), and an interaction effect (δ_k); this is Goodman's (1979b) model of uniform association (also, see Duncan 1979). This model equates the odds ratios pertaining to adjacent categories in an ordered table; it adds the specification of equal distances between strata to the previous models of homogeneous row and column effects.

As shown in Lines 5 through 7 of Panel A, the models of homogeneous row and column effects and uniform association fit the data rather poorly. We conclude that mobility processes at this level of aggregation cannot be fully explained by a vertical ordering of occupational strata on a single dimension. It would be incorrect to conclude from this finding that there is no hierarchical aspect to mobility among white-collar, blue-collar, and farm strata. First, the scaling models do account for about 80 percent of the test statistic under conditional independence. Second, the models do not fit because

they can not satisfactorily account for stratum inheritance, yet in a 3 X 3 table even the simplest of the scaling models (uniform association) is not identified when all three cells on the main diagonal have been fitted with unique parameters. In less aggregated tables, it is possible to fit such scaling models and, at the same time, to fit parameters for occupational inheritance (Goodman 1979a).

The cross-national consistency in the fit of quasi-perfect mobility provides some evidence of similarity in processes of mobility, but we have not yet tested the degree of cross-national variation in the parameters estimated under this model. If the same model fits, but its coefficients vary from country to country, then convergence obtains only in a very limited sense. The remainder of Table 1 addresses this issue. Whereas each model in Panel A allows interactions between strata to vary across countries, each model in Panel B equates those interactions.[16] The fit statistics in Panel B reflect lack of fit in the models of Panel A as well as cross-national differences in coefficients, whereas the contrasts between fit statistics in Panels A and B reflect the latter component alone. As shown in Panel C, each of these contrasts is highly significant statistically. At the same time, there is also a great deal of cross-national similarity in parameter estimates; no more than 3.6 percent of the chi-square statistic under conditional independence is attributable to variation in parameters. A similar conclusion may be drawn from the fit of the model of all two-way interactions, which allows four df for interaction between origin and outcome strata (Line 14 of Panel B).

These results make it quite clear that the "cross-nationally common element heavily predominates over the cross-nationally variable one" (Erikson, Goldthorpe, and Portocarero 1982:12). Not only does one simple model, quasi-perfect mobility, fit all of these data satisfactorily, but its coefficients vary only slightly between countries. These findings of cross-national invariance provide strong support for the FJH revision of the Lipset-Zetterberg hypothesis.

The results of Table 1 imply convergence among industrialized countries in our sample, but they also suggest that conclusions of invariance apply equally to the full sample. Under each of the models of Table 1, the share of association due to cross-national interaction effects (L^2_H/L^2_T) is virtually the same in the full sample as in the industrialized subsample. This suggests an extension of the scope of the FJH hypothesis to state that mobility regimes are much the same in all complex societies, regardless of economic development.[17] This uniformity is perhaps the analogue in comparative mobility analysis to the finding of invariant prestige hierarchies in complex societies (Treiman 1977). Indeed, there may be more than analogy here, since the same processes which produce the uniformity in prestige may also account for the invariance in mobility. Recall our earlier hypothesis that cross-national regularities in the economic resources and desirability accorded occupations may result in uniform mobility processes; it is commonly argued that these regularities also account for the uniformity in occupational prestige hierarchies (Treiman 1977; Goldthorpe and Hope 1974).

2.2 Sources of Variation in Mobility Rates

We have found that observed rates of mobility vary dramatically between countries while social fluidity is nearly invariant. This implies that intersocietal differences in observed rates must be attributed to variations in occupational distributions, yet McClendon (1980b:493) has recently claimed that "cross-national variance in exchange mobility has a strong effect which is at least as great as the structural effects among the more developed nations." Table 2 provides summary statistics for selected models that permit us to pursue this issue in greater detail.

Table 2 About Here

The models of Table 2 are described using the conventional notation for hierarchical models in which lower order terms are implied by the presence of higher order terms. For example, Model 1, (FC)(SC), is conditional independence, which allows the distributions of father's occupation (F) and son's occupation (S) to vary across countries (C). Models 2, 3, and 4 place successive equality constraints on the father's distribution, the son's distribution, and on both these distributions. Hence the contrasts in Lines 6, 7, and 8 represent intersocietal variation in occupational supply and demand. Model 5 restricts the association between the father's and son's strata to be the same across countries, so the chi-square statistic measures departures from constant social fluidity. The L^2/df ratio for this model is only about 5 percent as large as those for the contrasts in Lines 6 to 8; we conclude that cross-national differences in the margins are far more important

than differences in social fluidity.

The remaining models of Table 2 address the same issue using quasi-perfect mobility (Model 10) as an alternative baseline. We place successive equality constraints on the effects of the father's margins (Model 12), the son's margins (Model 13), both margins (Model 14), and the associations in the quasi-perfect mobility model (Model 11). Again, a comparison of L^2/df ratios for the contrasts reveals that cross-national differences in mobility are induced primarily by variation in marginal effects, not by variation in social fluidity. This conclusion is also supported by a comparison of L^2_H/L^2_T ratios where Model 9 specifies the association to be explained.[18] These results indicate that Lipset and Zetterberg were correct to consider marginal distributions the primary determinant of variation in observed mobility rates, but mistaken to suggest that the shape of these distributions would be rendered uniform by the standardizing logic of industrialism (Erikson, Goldthorpe, and Portocarero 1982:25).

2.3 Sources of Variation in Social Fluidity

While we have emphasized the fundamental similarity of mobility patterns, we do not deny that there are real national variations in social fluidity; the model of invariance can be rejected at any conventional level of statistical significance.' The remainder of this paper explores the structure of these differences and the effect of economic and noneconomic variables on them.

Before introducing exogenous variables into our models, we ask if cross-national variation in social fluidity might be captured by a

single parameter for the strength of inheritance that pertains to all of the strata. Table 3 compares cross-national variation in the general level of inheritance with that in stratum-specific inheritance. Model 1 describes constant, quasi-perfect mobility, and Model 2 introduces a general inheritance parameter (U) that varies from country to country, but is the same for each stratum within a given country. The contrast between Model 1 and Model 2 (Line 4) measures cross-national differences in the general inheritance parameter. Model 3 permits all of the stratum inheritance parameters to vary across countries, so the contrast between Model 2 and Model 3 (Line 5) measures cross-national differences in stratum-specific inheritance that are independent of variation in the general inheritance parameter.

Table 3 About Here

This partition of the test statistics shows that there is statistically significant cross-national variation in both the general level of stratum inheritance and in stratum-specific departures from it. Nearly 45 percent of the total variation in social fluidity pertains to the general level of stratum inheritance, and about 55 percent pertains to variations in stratum-specific inheritance. At the same time, the former component of association is larger relative to its degrees of freedom than is the latter. Clearly, cross-national variation in social fluditiy cannot be summarized by a single parameter, and the following analysis considers the effect of exogenous variables on each of the inheritance parameters under quasi-perfect mobility.

2.4 Explained and Unexplained Variation in Social Fluidity

Although the model of constant social fluidity is rejected at conventional levels of statistical significance, small departures from the model are sufficient to generate a significant chi-square value with a sample of more than 110,000 cases. Thus, assertions of nonconvergence would be more convincing if cross-national variation were linked explicitly to exogenous variables that influence the mobility process. We have estimated a number of loglinear models in which measures of industrialization, educational enrollment, social democracy, and income inequality are used to explain cross-national variation in stratum inheritance. These are the major explanatory variables identified in previous research, and for the most part we have used standard measurements of these variables.[19] The models of Table 4 also include a dummy variable with the value '1' for Hungary and '0' for all other countries. We have found that Hungary is an outlier in every one of our models, and its presence tends to dominate and distort relationships that appear for other countries. We experimented with numerous treatments of the data, including shifts in functional form and the creation of a dummy variable for socialism in both Hungary and Yugoslavia, but we were unable to explain the Hungarian case. Simkus (1981) has documented the marked shifts in occupational inheritance that followed the Hungarian transition to socialism.

Table 4 About Here

We begin this part of the analysis with global tests of the effects of the exogenous variables on mobility parameters. Then we turn to a

closer examination of the effects of each exogenous variable on each parameter of the mobility model. Panel A of Table 4 reports fit statistics for the baseline models of conditional independence (Line 1) and variable quasi-perfect mobility (Line 2). In Panel B, Model 3 describes invariant quasi-perfect mobility, and Model 4 permits each of the 5 explanatory variables to interact with each of the parameters of the quasi-perfect mobility model. The contrast between Model 3 and Model 4 shows the amount of cross-national variability that is explained by the 5 exogenous variables (Line 5), and the contrast between Model 4 and Model 2 shows the amount of cross-national variability that is not explained by the exogenous variables (Line 6). The contrast between Lines 2 and 3 gives the total cross-national variation in the quasi-perfect mobility model (Line 7). Just as the models in Panel B partition the joint variation of the inheritance parameters, the models in Panels C, D, and E of Table 4 partition cross-national variation in each inheritance parameter, net of the others.

The exogenous variables account for most of the cross-national variation in stratum inheritance; 74.8 percent of this variation is explained by the five variables (1010/1350 = .748). The exogenous variables account for 84.9 percent of the net cross-national variation in white-collar inheritance (219/258) and for 93.9 percent of the net cross-national variation in blue-collar inheritance (526/560); however, farm inheritance is explained with somewhat less success (251/475 = .528). This evidence of systematic, cross-national variation in mobility parameters lends greater credence to assertions of

nonconvergence.[20]

In this context, it is worth noting that there is greater cross-national variability in the parameters of farm inheritance than in those of white-collar or blue-collar inheritance.[21] When the parameters are expressed in logarithmic form, the variation in the blue-collar and white-collar parameters is virtually the same. The ranges are identical, 1.73, and the standard deviations are 0.433 and 0.402 for white-collar and blue-collar strata, respectively. In contrast, the range of farm parameters is 1.90, and its standard deviation is 0.620.

2.5 General and Stratum-Specific Effects on Immobility

Table 5 reports summary statistics for a set of models that permit us to estimate the effects of each explanatory variable on the general level of stratum inheritance and on stratum-specific inheritance. Our analysis is based upon backward selection from the baseline model in Panel A (Line 1), which includes all possible interactions between the exogenous variables and parameters of stratum inheritance. We have included redundant parameters in the description of Model 1, so interactions between an exogenous variable and stratum-specific inheritance can be dropped without deleting the interactions of that same exogenous variable with general stratum inheritance. For example, in Line B2, where the term (QI) is deleted, the model no longer includes stratum-specific effects of industrialization, but it does include a possible effect of industrialization on the general level of stratum inheritance. In Line B3, both the (QI) and (UI) terms are deleted, so

the model includes no effects of industrialization. Thus, the contrast between Line B2 and Line B3 pertains to the general effect of industrialization, and the contrast between Line A1 and Line B2 pertains to the stratum-specific effects of industrialization (Line 5). In this case, industrialization has a modest general effect (L^2 = 21 with 1 df) and very small, but statistically significant, stratum-specific effects (L^2 = 12 with 2 df). Panels C to F of Table 5 report similar analyses of the effects of the other explanatory variables.

The Hungarian case accounts for 24.6 percent of the test statistic for cross-national variation in mobility parameters; this underlines the importance of seeking theoretical explanations of East-European mobility regimes.[22] Social democracy accounts for 14.6 percent of the test statistic, and income inequality accounts for 8.1 percent of the test statistic. In contrast, industrialization and education each account for only 2.4 percent of the test statistic. Contrary to theories of convergence, this indicates quite clearly that political variables - including the Hungarian exception - influence mobility processes, even after economic development is controlled. It disconfirms Ossowski's hypothesis that the consequences of socialist policies were in fact the result of concurrent economic expansion. Indeed, the relative strength of political effects suggests a reversal in one of the traditional issues of comparative mobility research. Rather than asking if there are differences in mobility once countries industrialize, we might instead ask if there are any differences once countries effect a political program. At least in the present data, the

logic of industrialism demands no more uniformity in mobility regimes than does the logic of political organization.

Table 5 About Here

We have considered two alternative explanations of this finding. First, industrialization and educational enrollment might have larger effects in the reduced form equations, that is, in models that do not already include interactions with political variables. This is not the case in the present data; even when industrialization or educational enrollment is entered by itself, neither variable accounts for a large component of cross-national variability in stratum inheritance. Second, comparisons among components of the likelihood-ratio test statistic are affected by incidental cross-national variations in sample size that may be related to the explanatory variables. Suppose the extremes of social democracy were represented by very large samples, while the extremes of industrialization were represented by very small samples. Then, social democracy might account for a larger test statistic even if its effects were no stronger than those of industrialization. To take account of this possibility, we have examined scatter plots of the size of the national samples against each of the exogenous variables, and we have found no evidence that incidental variations in sample size explain the power of the contrasts involving political variables.

The contrasts in Table 5 also show that the effects of exogenous variables cannot be generalized across inheritance parameters. All of the tests of differences between general and stratum-specific effects of

the exogenous variables are statistically significant beyond the 0.05 level, and less than half of the total effects of education, social democracy, and socialism pertain to the overall level of inheritance. At the same time, virtually all of the effects of income inequality pertain to the general inheritance parameter; its stratum-specific effects are trivial.

Table 6 shows the effects of the explanatory variables on the general and stratum-specific parameters of inheritance. The first column reports coefficients estimated under the model of uniform inheritance, and the remaining columns report coefficients from the model of quasi-perfect mobility.[23] For purposes of comparison, the final row of the table shows the coefficients estimated when the parameters of uniform inheritance and quasi-perfect mobility are constrained to be the same in all countries.

The coefficients for interaction with industrialization demonstrate the conflicting consequences of economic development for inheritance processes. Although there is a negative effect of industrialization on blue-collar and farm inheritance, the coefficient of white-collar inheritance is insignificant at the 0.05 level. The discontinuity between this result and findings from previous research should be emphasized. We have noted that one body of literature has reported a positive relationship between industrialization and exchange mobility (Hazelrigg 1974; Cutright 1968), while another has reported no significant association (Hazelrigg and Garnier 1976; Hardy and Hazelrigg 1978). Both of these conclusions are partially correct, since the

consequences of economic development are by no means uniform. The negative association between industrialization and inheritance does not extend to the white-collar stratum; it may not be surprising that a stratum with vested interests in its own reproduction proves resistant to pressures for the equalization of opportunity.

Table 6 About Here

The effects of educational enrollment are equally diverse. There is a positive association between farm inheritance and education, but the coefficients for the remaining strata are nonsignificant. Although it is commonly argued that the expansion of education facilitates mobility, we find no evidence of this effect in our multivariate model. This provides some support at the macro-social level for radical interpretations of schooling as an instrument for the maintenance of status over generations (see Bowles and Gintis 1976). Moreover, farm inheritance actually increases with educational enrollment. This suggests that the transition to a "credential society" may restrict the mobility chances of farmers, perhaps because their access to education is limited by cultural expectations and work obligations.

Simkus' (1981) analysis of intercohort trends in Hungarian mobility uncovered a dramatic reduction in elite persistence during the transition to socialism. However large this trend, we find that in comparison with other nations the introduction of socialist policies in Hungary did not eliminate inheritance of advantage; in fact, net of the other variables in our model, the white-collar inheritance coefficient in Hungary is strongly positive. From this, one might speculate that

theories of a new class (Djilas 1957) apply not only to material privileges enjoyed by the upper strata, but also to privileges of intergenerational inheritance (compare Giddens 1973:240). This is particularly striking because the new class does not retain rights of disposal over private property; in the absence of formal ownership we suspect that advantaged access to education assumes a primary role in status transmission (see Simkus and Andorka 1982).

Although the strength of white-collar inheritance might give an impression of impermeable class boundaries, this must be reconciled with the extreme fluidity of Hungary's blue-collar stratum. Net of all other effects in the model, the probability of blue-collar inheritance is 3.3 times less likely in Hungary. Blue-collar disinheritance may result from explicit educational quotas designed to favor proletarian families (Giddens 1973:231; Parkin 1971:142), or from the attenuation of a distinctive working class subculture (Parkin 1971:157).

The coefficients for social democracy underscore the point that the exogenous variables have nonuniform effects on inheritance parameters. Although blue-collar inheritance is strengthened by social democratic politics, white-collar and farm inheritance are weakened by them. Our finding for those two strata suggests that social democracy can be effective in equalizing life chances and producing a more open society. In addition, these results are a notable exception to the pattern of white-collar resistance to the equalization of opportunity; social democrats may indeed be "liberals who really mean it" (Parkin 1979: 189). At the same time, recall that there is no evidence that

blue-collar immobility is reduced in social democracies.

The final variable in Table 6 pertains to the contention that rates of mobility are governed by the degree of inequality between social classes. We find significant and uniform effects on the three quasi-perfect parameters, but the direction of effects is contrary to that hypothesized by Tyree, Semyonov, and Hodge (1979). No less than these authors, we find this result difficult to interpret; however, it may be that high rates of stratum inheritance motivate various forms of collective action that reduce income inequality. Blau and Duncan (1967:440) argue that workers lacking prospects of advancement for themselves or their children are more likely to organize a union to raise wages or to vote for a party advocating progressive taxation. It follows that income inequality and stratum inheritance may be negatively related, albeit through a causal path opposite to that assumed by Tyree, Semyonov, and Hodge.

3.0 CONCLUSIONS

We have gained new insights into the leading issues of comparative social mobility by reanalyzing a standard set of data. Although we know the limitations of these data, we feel that our results set a provisional baseline for future comparative research with "second generation" studies. We expect and hope that many of our findings will be elaborated, challenged, and falsified in futdre work.

The preceding analysis provides considerable support for the FJH revision of the Lipset-Zetterberg hypothesis, which implies that historical and cultural variations affect the shape of the occupational

structure but not the interactions between occupational strata; this invariance is perhaps stronger than heretofore supposed. We have also proposed that the FJH revision might be elaborated in two respects. First, we suggested that uniformity in mobility regimes is not limited to highly industrialized societies but may extend across levels of economic development. Industrialized countries share a common pattern of mobility, but the pattern can not derive from "the logic of industrialism" if it applies equally to less developed societies. This uniformity in mobility patterns may be the analogue to invariance in prestige hierarchies, in the sense that both may result from cross-national regularities in the resources and desirability accorded occupations.

Second, we provided greater substance to the FJH revision by specifying the structure of the shared regime. Since the revision remains agnostic with regard to this structure, we proceeded inductively by fitting a series of mobility models. It is most striking that the quasi-perfect model provided superior fit in nearly all the countries.[24] This finding implies that Blau and Duncan's (1967) hypothesis of semipermeable class boundaries is not confirmed in the United States, nor in the other countries in our sample. Rather, there is a symmetry of exchanges between occupational strata, once intergenerational shifts in the marginal distributions are controlled. We have found consistent evidence of strong white-collar and farm inheritance, perhaps consonant with the beliefs of the more extreme critics of rigidity in the class structure. Although the strength of

inheritance within these strata might lend the impression of distinct class boundaries, this must be reconciled with extreme fluidity in the blue-collar stratum. Indeed, in several countries there is actually a net propensity for blue-collar disinheritance; this finding extends Goodman's (1965,1969a,1969b) results on the classic British and Danish mobility tables. Within all sixteen countries, the picture that emerges is one of severe immobility at the two extremes of the occupational hierarchy and considerable fluidity in the middle. Thus, the cross-national structure of mobility closely resembles the pattern described by Featherman and Hauser (1978) in the United States.

Although we have propounded a thesis of basic similarity, we have also analyzed deviations from the common mobility regime. In this respect we departed from earlier international comparisons by directly incorporating several explanatory variables within a mobility model and by estimating and comparing the effects of these variables on inheritance in each occupational stratum. Contrary to assumptions of convergence theories, the results suggest that differences in the structure of mobility are at least as much a consequence of political organization as of economic development. The findings also suggest that the effects of political and economic variables are more complex than commonly supposed, in the sense that they cannot be generalized across occupational strata. In this regard, we have found that the white-collar stratum is often successful in resisting pressures for the equalization of opportunity.

The need to extend and elaborate our analysis is accentuated by our

finding that intersocietal differences in observed mobility are induced principally by variations in occupational supply and demand. This suggests that future research should explore the effects of economic and political variables on the shape of the social hierarchy. Much the same conclusion was advanced by Hauser et al. (1975) in their longitudinal analysis of American mobility classifications. They argued that further research cannot treat marginal differences as a nuisance factor if they are the driving force behind temporal change in observed mobility rates. We might add that economic and political variables may well have a greater effect on the structure of occupational supply and demand than on social fluidity. Although issues of this nature may be addressed within the general analytic framework presented here, we leave this task for future research.

FOOTNOTES

1. Matras (1980) and Simkus (1981) have recently reviewed comparative mobility studies.
2. Of course, there is an element of subjectivity in any evaluation of the FJH revision; it is unclear how much similarity in mobility regimes is necessary to confirm the hypothesis.
3. Following McClendon (1980a,1980b), Bulgaria was omitted from the data because the sample included both males and females. Some of the cited studies have supplemented these data with mobility classifications from other countries.
4. This argument for uniformity may need qualification in the case of socialist societies to the degree that they accord greater desirability to blue-collar occupations and prohibit formal ownership of economic resources (Parkin 1971; Giddens 1973).
5. Recall that chi-square is directly proportional to sample size. There are 37,044 observations in the 9 tables for industrialized countries and 113,336 observations in the total sample.
6. Appendix 2 shows the fit of the models in Panel A in each of the 16 countries.
7. Iutaka et al. (1975) also found that the quasi-perfect mobility model adequately fitted a number of national mobility tables, primarily drawn from Miller (1960). Our preference for this model is specific to the 3 X 3 classification used here. In other mobility tables, including disaggregations of this one, other models may well be preferable.

8. For an explanation of quasi-symmetry, see Bishop, Fienberg, and Holland (1975:Ch. 8). Hauser and Featherman (1978:184-187) and Hauser (1981) discuss the relevance of quasi-symmetry to the interpretation of social mobility.

9. This property of the data is also consistent with certain social distance models, for example, crossings models (Goodman 1972, Pöntinen 1982).

10. As Goodman (1969b:15) has demonstrated, the quasi-perfect mobility model is especially useful in comparisons of occupational or stratum persistence because each inheritance parameter is independent of the others. This is not true, for example, of the "inheritance" parameters analyzed by McClendon (1980b:499-500) or of the interaction parameter analyzed by Tyree, Semyonov, and Hodge (1979).

11. Appendix 3 gives estimated parameters of stratum inheritance under quasi-perfect mobility for each of the sixteen countries.

12. Note that Great Britain is not included in the present analysis, and our Danish classification, obtained from a 1972 survey, does not show blue-collar status disinheritance.

13. The contrast between Model 2 and Model 3 yields $L^2 = 6,072$ with 32 df.

14. See Goodman (1965:569-571) for an early application of this model to the classic British and Danish mobility tables.

15. The model of perfect blue-collar mobility is equivalent in the 3 X 3 table to a crossings model without a parameter for blue-collar immobility. It would be interesting to recast some of our

comparative findings in the terms of this reparameterization; because of the more satisfactory fit of quasi-perfect mobility, we have not done so here.

16. The constrained version of Model II* is not presented in Panel B because no computer program for the estimation of this model was available.

17. Since the data are primarily from Western, industrialized nations, this finding is most tentative.

18. Hope (1982) addresses the same issue in a reanalysis of the detailed mobility tables for Great Britain, France, and Sweden that were assembled by Erikson, Goldthorpe, and Portocarero (1979,1982). Hope expresses the effects of father's and son's occupational classes in terms of their sum and difference. We believe that the present specification is more transparent, but global conclusions about variation in marginal effects are necessarily the same.

19. The sources, descriptions, and values of the exogenous variables are given in Appendix 4. We introduced a measure of social democracy, obtained from Jackman (1975), and we developed regression estimates of income inequality where this variable was not reported by Jain (1975).

20. As shown below, the Hungarian case accounts for about 25 percent of the test-statistic for cross-national variation in quasi-perfect mobility; compare Line D16 of Table 5 with Line 7 of Table 4. Thus, when we exclude Hungary from the analysis, the 4 explanatory variables account for proportionately less of the cross-national

variation; our results are otherwise unaffected by the choice between excluding Hungary and the specification of a dummy variable for that nation.

21. This is obscured in Table 4 because the chi-square statistics for variability in each stratum inheritance parameter are partly a function of the number of observations in that stratum.

22. At the same time, recall our earlier observation that Yugoslavia is not an outlier in our analyses.

23. Thus, the coefficients in the three, right-hand columns include effects of the explanatory variables on both general and stratum-specific inheritance.

24. However, our ability to choose among competing models is restricted by the aggregation of the present data. Some models that are empirically distinct in more detailed tables cannot be distinguished in our analysis.

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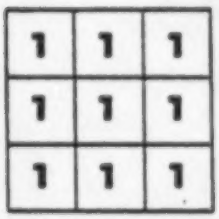
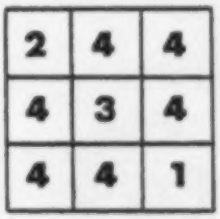
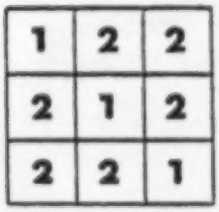
Figure 1. Parameter displays describing the structure of association for selected models of mobility.



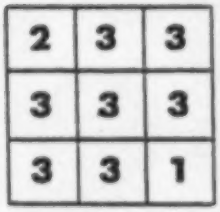
Independence



Quasi-Perfect Mobility



Uniform Inheritance



Perfect Blue-Collar Mobility

Table 1. Selected models of mobility with and without cross-national equality constraints: Sixteen country sample and industrialized subsample.

Model	Full sample			Industrialized countries		
	L^2	df	L^2_H/L^2_T	L^2	df	L^2_H/L^2_T
A. Unconstrained models						
1. Independence	42970	64	100.0	12020	36	100.0
2. Quasi-perfect mobility	150	16	0.3	77	9	0.6
3. Uniform inheritance	6222	48	14.5	2233	27	18.6
4. Perfect blue-collar mobility	841	32	2.0	206	18	1.7
5. Homogeneous row and column effects (I*)	8091	32	18.8	2302	18	19.2
6. Homogeneous row and column effects (II*)	7399	32	17.2	2129	18	17.7
7. Uniform association	9058	48	21.1	2567	27	21.4
8. Symmetry	24636	48	-	6748	27	-
B. Models with cross-national constraints						
9. Quasi-perfect mobility	1500	61	3.5	513	33	4.3
10. Uniform inheritance	7069	63	16.5	2429	35	20.2
11. Perfect blue-collar mobility	1640	62	3.8	538	34	4.5
12. Homogeneous row and column effects (I*)	8842	62	20.6	2598	34	21.6
13. Uniform association	9647	63	22.5	2693	35	22.4
14. All two-way interactions	1329	60	3.1	438	32	3.6
C. Contrasts between constrained and unconstrained models						
15. 2 vs. 9	1350	45	3.1	436	24	3.6
16. 3 vs. 10	847	15	2.0	196	8	1.6
17. 4 vs. 11	799	30	1.9	332	16	2.8
18. 5 vs. 12	751	30	1.7	296	16	2.5
19. 7 vs. 13	589	15	1.4	126	8	1.0

NOTE: The full sample includes Australia, Belgium, France, Hungary, Italy, Japan, Philippines, Spain, United States, West Germany, West Malaysia, Yugoslavia, Denmark, Finland, Norway and Sweden. The industrialized subsample includes Australia, Belgium, France, United States, West Germany, Denmark, Finland, Norway and Sweden.

Table 2. Tests of cross-national variation in occupational supply and demand.

Model	L^2	df	L^2/df	L^2_H/L^2_T
A. Tests with independence baseline				
1. (FC)(SC)	42970	84	671.4	-
2. (F)(SC)	54900	94	584.0	-
3. (FC)(S)	55100	94	586.2	-
4. (F)(S)(C)	67030	124	540.6	-
5. (FC)(SC)(FS) (Variation in association)	1329	60	22.2	-
6. 2 vs. 1 (Variation in father's margin)	11930	30	397.7	-
7. 3 vs. 1 (Variation in son's margin)	12130	30	404.3	-
8. 4 vs. 1 (Variation in both margins)	24060	60	401.0	-
B. Tests with quasi-perfect baseline				
9. (F)(S)(C)(Q)	18620	121	153.9	100.0
10. (FC)(SC)(QC)	150	16	9.4	0.8
11. (FC)(SC)(Q)	1500	61	24.6	8.1
12. (F)(SC)(QC)	3668	46	79.7	19.7
13. (FC)(S)(QC)	2596	46	56.4	13.9
14. (F)(S)(QC)	5362	76	70.6	28.8
15. 11 vs. 10 (Variation in association)	1350	45	30.0	7.3
16. 12 vs. 10 (Variation in father's margin)	3518	30	117.3	18.9
17. 13 vs. 10 (Variation in son's margin)	2446	30	81.5	13.1
18. 14 vs. 10 (Variation in both margins)	5212	60	86.9	28.0

NOTE: F = Father's stratum, S = Son's stratum, C = Country, Q = Quasi-perfect mobility levels matrix.

Table 3. A partition of cross-national variation in quasi-perfect inheritance.

Model	L^2	df	L^2/df	L^2_H/L^2_T
A. Nested hierarchy of models				
1. (FC)(SC)(Q)	1500	61	24.6	-
2. (FC)(SC)(Q)(UC)	896	46	19.5	-
3. (FC)(SC)(QC)	150	16	9.4	-
B. Partitioning the variation in Q				
4. 1 vs. 2 (Variation in U)	604	15	40.3	44.7
5. 2 vs. 3 (Variation in Q net of U)	746	30	24.9	55.3
6. 1 vs. 3 (Total Variation in Q)	1350	45	30.0	100.0

NOTE: F = Father's stratum, S = Son's stratum, C = Country, Q = Quasi-perfect mobility levels matrix, U = Uniform inheritance levels matrix.

Table 4. Models with interaction terms between exogenous variables and quasi-perfect inheritance parameters.

	Model	L^2	df	L^2/df	L^2_H/L^2_T	L^2_H/L^2_T
A.	Baseline models					
1.	(FC)(SC)	42970	64	671.4	100.0	
2.	(FC)(SC)(QC)	150	16	9.4	0.3	
B.	White-collar, blue-collar, and farm inheritance					
3.	(FC)(SC)(Q)	1500	61	24.6	3.5	
4.	(FC)(SC)(QI)(QE)(QH)(QD)(QN)	490	46	10.7	1.1	
5.	4 vs. 3 (Explained variation)	1010	15	67.3	2.4	74.8
6.	4 vs. 2 (Unexplained variation)	340	30	11.3	0.8	25.2
7.	3 vs. 2 (Total variation)	1350	45	30.0	3.1	100.0
C.	White-collar inheritance					
8.	(FC)(SC)(W)(BC)(AC)	408	31	13.2	0.9	
9.	(FC)(SC)(WI)(WE)(WH)(WD)(WN)(BC)(AC)	189	26	7.3	0.4	
10.	9 vs. 8 (Explained variation)	219	5	43.8	0.5	16.2
11.	9 vs. 2 (Unexplained variation)	39	10	3.9	0.1	2.9
12.	8 vs. 2 (Total variation)	258	15	17.2	0.6	19.1
D.	Blue-collar inheritance					
13.	(FC)(SC)(WC)(B)(AC)	710	31	22.9	1.7	
14.	(FC)(SC)(WC)(BI)(BE)(BH)(BD)(BN)(AC)	184	26	7.1	0.4	
15.	14 vs. 13 (Explained variation)	526	5	105.2	1.2	39.0
16.	14 vs. 2 (Unexplained variation)	34	10	3.4	0.1	2.5
17.	13 vs. 2 (Total variation)	560	15	37.3	1.3	41.5
E.	Farm inheritance					
18.	(FC)(SC)(WC)(BC)(A)	625	31	20.2	1.5	
19.	(FC)(SC)(WC)(BC)(AI)(AE)(AH)(AD)(AN)	374	26	14.4	0.9	
20.	19 vs. 18 (Explained variation)	251	5	50.2	0.6	18.6
21.	19 vs. 2 (Unexplained variation)	224	10	22.4	0.3	16.6
22.	18 vs. 2 (Total variation)	475	15	31.7	1.1	35.2

NOTE: F = Father's stratum, S = Son's stratum, C = Country, Q = Quasi-perfect mobility levels matrix, W = White-collar inheritance, B = Blue-collar inheritance, A = Farm inheritance, I = Industrialization, E = Educational enrollment, H = Hungary, D = Social democracy, N = Inequality. The denominator in the first L^2_H/L^2_T ratio is the association under the model of independence (Line 1). The denominator in the second such ratio is the total variation in quasi-perfect mobility (Line 7).

Table 5. Models of general and stratum-specific effects of exogenous variables on inheritance parameters.

	Model	L^2	df	L^2/df	L^2_H/L^2_T
A.	Baseline model				
	1. (FC)(SC)(QI)(QE)(QN)(QD) (QN)(UI)(UE)(UN)(UD)(UN)	490	46	10.7	
B.	Industrialization				
	2. Delete (QI) from baseline	502	48	10.5	
	3. Delete (QI)(UI) from baseline	523	49	10.7	
	4. 2 vs. 3 (General effect)	21	1	21.0	1.6
	5. 1 vs. 2 (Stratum-specific effect)	12	2	6.0	0.9
	6. 1 vs. 3 (Total effect)	33	3	11.0	2.4
C.	Educational enrollment				
	7. Delete (QE) from baseline	517	48	10.8	
	8. Delete (QE)(UE) from baseline	522	49	10.7	
	9. 7 vs. 8 (General effect)	5	1	5.0	0.4
	10. 1 vs. 7 (Stratum-specific effect)	27	2	13.5	2.0
	11. 1 vs. 8 (Total effect)	32	3	10.7	2.4
D.	Hungary				
	12. Delete (QN) from baseline	680	48	14.2	
	13. Delete (QN)(UN) from baseline	822	49	16.8	
	14. 12 vs. 13 (General effect)	142	1	142.0	10.5
	15. 1 vs. 12 (Stratum-specific effect)	190	2	95.0	14.1
	16. 1 vs. 13 (Total effect)	332	3	110.7	24.6
E.	Social democracy				
	17. Delete (QD) from baseline	626	48	13.0	
	18. Delete (QD)(UD) from baseline	687	49	14.0	
	19. 17 vs. 18 (General effect)	61	1	61.0	4.5
	20. 1 vs. 17 (Stratum-specific effect)	136	2	68.0	10.1
	21. 1 vs. 18 (Total effect)	197	3	65.7	14.6
F.	Inequality				
	22. Delete (QN) from baseline	497	48	10.4	
	23. Delete (QN)(UN) from baseline	600	49	12.2	
	24. 22 vs. 23 (General effect)	103	1	103.0	7.6
	25. 1 vs. 22 (Stratum-specific effect)	7	2	3.5	0.5
	26. 1 vs. 23 (Total effect)	110	3	36.7	8.1

NOTE: F = Father's stratum, S = Son's stratum, Q = Quasi-perfect mobility levels matrix, U = Uniform inheritance levels matrix, I = Industrialization, E = Educational enrollment, H = Hungary, D = Social democracy, N = Inequality.

The denominator in the L^2_H/L^2_T statistic is the total variation in quasi-perfect mobility (Table 4, Line 7).

Table 6. Coefficients of interaction from models of general and stratum-specific effects of exogenous variables on inheritance parameters.

Exogenous variable	Inheritance parameters			
	Uniform	White-collar	Blue-collar	Farm
1. Industrialization	-.085 (.012)	.033 (.030)	-.109 (.028)	-.118 (.040)
2. Educational enrollment	.067 (.025)	-.094 (.061)	.001 (.059)	.401 (.076)
3. Hungary	-.483 (.034)	.835 (.108)	-1.208 (.077)	-.020 (.097)
4. Social democracy	-.058 (.008)	-.062 (.019)	.058 (.018)	-.331 (.025)
5. Inequality	-.268 (.022)	-.349 (.054)	-.118 (.054)	-.240 (.058)
Coefficients under models of invariance	1.290 (.007)	1.656 (.019)	.203 (.017)	2.512 (.023)

NOTE: Entries are metric coefficient, (standard error). The uniform inheritance coefficients are from the model (FC)(SC)(Q)(UI)(UE)(UH)(UD)(UN). White-collar, blue-collar, and farm coefficients are from Model 4 in Table 4. The coefficients under models of invariance refer to Model 10 in Table 1 for the uniform inheritance parameter, and to Model 9 in Table 1 for the quasi-perfect inheritance parameters. For convenience in presentation the scales of the educational enrollment, inequality, and social democracy indicators were divided by 10, and the scale of the industrialization indicator was divided by 1000.

Appendix 1. Frequencies for sixteen countries, father's occupation by son's occupation.

Australia			**Belgium**		
292	170	29	497	100	12
290	608	37	300	434	7
81	171	175	102	101	129
France			**Hungary**		
2085	1047	74	479	190	14
936	2367	57	1029	2615	347
592	1255	1587	516	3110	3751
Italy			**Japan**		
233	75	10	465	122	21
104	291	23	159	258	20
71	212	320	285	307	333
Philippines			**Spain**		
239	110	76	7622	2124	379
91	292	111	3495	9072	597
317	527	3098	4597	8173	14833
United States			**West Germany**		
1650	641	34	3634	850	270
1618	2692	70	1021	1694	306
694	1648	644	1068	1310	1927
West Malaysia			**Yugoslavia**		
406	235	144	61	24	7
176	369	183	37	92	13
315	578	2311	77	148	223
Denmark			**Finland**		
79	34	2	39	29	2
55	119	8	24	115	10
25	48	84	40	66	79
Norway			**Sweden**		
90	29	5	89	30	0
72	89	11	81	142	3
41	47	47	27	48	29

NOTE: The United States frequencies were scaled downward by a factor of .62 to reflect the efficiency of the sampling design relative to simple random sampling. In some countries, frequencies were weighted to adjust for over-sampling of certain population groups.

Appendix 2. Fit statistics for selected models of mobility, by individual country.

Country	Independence (4 df)	Quasi-perfect mobility (1 df)	Uniform inheritance (3 df)	Perfect blue collar mobility (2 df)	Model I* (2 df)	Model II* (2 df)	Uniform association (3 df)	Symmetry (3 df)
Australia	452	12	108	15	114	101	136	151
	(100.0)	(2.7)	(23.9)	(3.3)	(25.2)	(22.3)	(30.1)	
Belgium	628	11	107	23	189	186	193	284
	(100.0)	(1.8)	(17.0)	(3.7)	(30.1)	(29.6)	(30.7)	
France	4252	23	834	42	842	723	1043	1815
	(100.0)	(0.5)	(19.6)	(1.0)	(19.8)	(17.0)	(24.5)	
Hungary	3661	1	1392	220	154	140	209	3779
	(100.0)	(0.0)	(38.0)	(6.0)	(4.2)	(3.8)	(5.7)	
Italy	665	2	94	2	89	87	96	232
	(100.0)	(0.3)	(14.1)	(0.3)	(13.4)	(13.1)	(14.4)	
Japan	568	1	53	14	131	128	134	579
	(100.0)	(0.2)	(9.3)	(2.5)	(23.1)	(22.5)	(23.6)	
Philippines	1267	0	54	30	195	143	283	455
	(100.0)	(0.0)	(4.3)	(2.4)	(15.4)	(11.3)	(22.3)	
Spain	23350	68	2246	363	5072	4652	5550	12350
	(100.0)	(0.3)	(9.6)	(1.6)	(21.7)	(19.9)	(23.8)	
United States	2097	21	766	54	333	323	348	2968
	(100.0)	(1.0)	(36.5)	(2.6)	(15.9)	(15.4)	(16.6)	
West Germany	4039	6	315	58	691	688	695	1197
	(100.0)	(0.1)	(7.8)	(1.4)	(17.1)	(17.0)	(17.2)	
West Malaysia	1267	0	132	3	111	87	179	289
	(100.0)	(0.0)	(10.4)	(0.2)	(8.8)	(6.9)	(14.1)	
Yugoslavia	176	1	18	3	36	32	41	204
	(100.0)	(0.6)	(10.2)	(1.7)	(20.5)	(18.2)	(23.3)	
Denmark	205	0	41	0	32	28	43	60
	(100.0)	(0.0)	(20.0)	(0.0)	(15.6)	(13.7)	(21.0)	
Finland	122	3	9	13	53	35	59	89
	(100.0)	(2.5)	(7.4)	(10.7)	(43.4)	(28.7)	(48.4)	
Norway	92	0	17	0	18	17	19	75
	(100.0)	(0.0)	(18.5)	(0.0)	(19.6)	(18.5)	(20.7)	
Sweden	128	1	36	1	30	29	32	110
	(100.0)	(0.8)	(28.1)	(0.8)	(23.4)	(22.7)	(25.0)	

NOTE: Entries are L^2, (L^2_H/L^2_T) under the model of independence.

Appendix 3. Selected coefficients from quasi-perfect mobility model for sixteen countries.

Country	White-collar inheritance	Blue-collar inheritance	Farm inheritance
Australia	1.030	0.227	2.401
	(.145)	(.135)	(.170)
Belgium	1.405	0.528	3.259
	(.168)	(.154)	(.262)
France	1.354	0.266	3.348
	(.060)	(.060)	(.098)
Hungary	2.699	-0.854	3.053
	(.095)	(.059)	(.076)
Italy	2.135	0.018	2.826
	(.176)	(.168)	(.218)
Japan	1.364	0.452	2.046
	(.123)	(.125)	(.181)
Philippines	1.302	0.637	2.110
	(.119)	(.118)	(.110)
Spain	1.767	0.446	2.718
	(.029)	(.026)	(.037)
United States	1.746	-0.308	2.798
	(.063)	(.054)	(.113)
West Germany	1.588	0.367	1.673
	(.049)	(.051)	(.057)
West Malaysia	1.128	0.164	1.913
	(.092)	(.096)	(.085)
Yugoslavia	1.499	0.326	1.944
	(.255)	(.228)	(.280)
Denmark	1.528	0.091	3.208
	(.302)	(.280)	(.384)
Finland	0.974	0.881	1.970
	(.302)	(.273)	(.358)
Norway	1.217	0.114	1.933
	(.274)	(.249)	(.328)
Sweden	1.708	-0.049	3.572
	(.316)	(.275)	(.635)

NOTE: Coefficients are in logarithmic form and represent deviations from the aggregate of off-diagonal cells.

Appendix 4. Industrialization, educational enrollment, inequality, and social democracy variables for sixteen countries.

Country	Industrialization	Educational enrollment	Inequality	Social democracy
Australia	4568	80	14.1	39.5
Belgium	5237	81	19.9	34.9
France	2945	73	24.7	11.6
Hungary	2584	66	13.8	0.0
Italy	1564	61	22.5	18.6
Japan	1782	74	17.3	35.7
Philippines	272	55	28.4	0.0
Spain	1266	55	18.5	0.0
United States	8263	87	16.3	0.0
West Germany	4488	78	16.6	37.4
West Malaysia	400	51	33.3	8.2
Yugoslavia	926	63	16.4	0.0
Denmark	5567	72	15.9	44.2
Finland	4928	66	19.9	26.5
Norway	4639	73	16.0	49.3
Sweden	5739	74	17.2	48.3

NOTE: The industrialization variable refers to per capita energy consumption in kilograms of coal, matched to the date of the corresponding mobility study (McClendon, 1980a). The educational enrollment variable is the proportion of the population between the ages of five and nineteen enrolled in primary or secondary education, computed for 1964 or 1965 (Taylor and Hudson, 1972). The inequality variable measures the percent of the national income going to the top five percent of households, matched as closely as possible to the date of the mobility study (Jain, 1975). When this statistic was not available, comparable figures were estimated from data on inequality among income recipients or workers (Jain, 1975), or from sectoral income distributions (Taylor and Hudson, 1975). These estimates were calculated with the regression procedure outlined by Tyree et al. (1979:416). The social democracy variable refers to the proportion of seats in the national legislature held by socialist or "social democratic" parties, averaged over the elections immediately preceding and following 1960 (Jackman, 1975).